

REMARKS

This is in response to the Office Action mailed October 16, 2001. In the Office Action, claims 1-16 were restricted into two classes. Reexamination and reconsideration of this case is respectfully requested in view of the amendments made herein and the following remarks.

Claims 15 and 16 have been amended. Claims 1-12 have been canceled without prejudice. Claims 17-34 have been added. Accordingly, claims 13-34 remain at issue in the patent application. Of those remaining at issue, claims 13 and 21 are independent claims. Applicant believes that no new matter has been added by this response.

I. Restriction Requirement

Paragraph 1 of the Office Action, claims 1-12 were restricted to Class I and claims 13-16 were restricted to Class II under 35 USC 121 and require election to one class.

Applicant hereby elects claims 13-16 in Class II.

Accordingly, Applicant has canceled claims 1-12 in Class I without prejudice in accordance with the restriction requirement.

II. Title

Applicant respectfully requests that the Title of the Application be changed to:

--METHODS FORMING AN INTEGRATED CIRCUIT PACKAGE WITH A SPLIT CAVITY WALL--.

III. Drawings

Applicant has amended Figures 1 and 4 in accordance with the illustration of Figure 7 where it is shown how the conductive strips 44,46 connect to the bond pad 16. Applicant has amended Figure 4 in accordance with Figure 1 where it is shown how the power busses 24,26 connect to the conductive strips 44,46. Applicant respectfully request the approval of the drawing changes by the Examiner in the attached "Request for Approval of Drawing Changes"

IV. Specification

Applicant has made amendments to the specification in accordance with the Figures and other portions of the specification to correct reference number errors and for consistency.

V. Claim Amendments

Applicant has amended dependent claims 15-16 unrelated to reasons of patentability.

Claim 15 was amended to correct an incorrect word "material" from a typographical error to the correct word "strip".

Claims 16 was amended to correct a typographical error in the preamble using the incorrect word "package" to "method" and to eliminate words "the steps of" in order to broaden the claim.

VI. New Claims

Applicant has added new method claims 17-34 corresponding to class II of the restricted claims.

Of these newly added claims, claim 21 is a new independent claim.

Claims 17-20 depend directly or indirectly from independent claim 13.

Claims 22-34 depend directly or indirectly from independent claim 21.

MARK UP VERSION TO SHOW CHANGES MADE TO SPECIFICATION

In the section "CROSS REFERENCE TO RELATED APPLICATION" previously added by the preliminary amendment mailed on 09/19/00, the paragraph therein was amended as follows:

"This application claims the benefit of and is a continuation of Application No. 09/153,630, filed September 15, 1998, now issued as U.S. Patent No. 6,153,829."

Page 6, line 18, the paragraph beginning there at was amended as follows:

"The bond pads 16 of the first bond shelf 18 [20] are connected to a pair of power busses 24 and 26 within the package. The busses 24 and 26 are separated and located within the same horizontal plane of the package. By locating both power busses 24 and 26 within the same plane the present invention provides a package that may require less layers than a package that has two power busses located within different layers of the package."

Page 7, line 23, the paragraph beginning there at was amended as follows:

"The different layers of bond pads 16, contacts 32 and busses [layers] 24 [,] and 26, routing traces 28, and bus 30 [and 32] may all be interconnected by vias 38. The busses 24 and 26 may include clearance spaces 42 that electrically isolate the busses 24 and 26 from the vias 38. Additionally, the busses 24 and 26 are also separated by spaces 43."

Page 8, line 1, the paragraph beginning there at was amended as follows:

"Figure 4 shows a first conductive strip 44 and a second

conductive strip 46 that wrap around an edge of the first bond shelf 18 [20] to connect the bond pads 16 to the power busses 24 and 26. As shown in Figure 1, the conductive strips 44 and 46 connect to the power busses 24 and 26 at the edge of the first bond shelf 18. The conductive strips 44 and 46 can be separated by a pair of notches 48 formed in the first bond shelf 18 [20]. Some of the bond pads 16 are connected [by strip 44] to bus 24 by conductive strip 44 while other bond pads 16 are connected to bus 26 by strip 46. The separate strips allow the bond pads 16 on the first shelf 18 to be connected to two different voltage levels. The other bond pads 16 on the first bond shelf 18 may be [20 are] interconnected to other layers and/or contacts 34 by vias 38."

Page 8, line 24, the paragraph beginning there at and continuing onto page 9 was amended as follows:

"The conductive strips 44 and 46 can be formed by initially masking off all surfaces of the package housing, except the edge of the [third shelf 22] first bond shelf 18 with a plating resist maskant 50, as shown in Figure 5. The masked housing can then be dipped into a plating bath 52 as shown in Figure 5. The plating bath 52 plates a conductive material such as copper onto the edge of the first bond shelf 18. The maskant 50 is then removed and the notches 48 can be drilled into the edges of the first bond shelf 18 to separate the plated material into the first and second conductive strips 44 and 46. All exposed copper surfaces may then be plated with gold."

Page 9, line 9, the paragraph beginning there at was amended as follows:

"As shown in Figure 7, portions 54 of the conductive strips 44 and 46 may extend onto the first bond shelf 18 to connect to a

bonding pad 16. The extra portions 54 may further anchor the conductive strips 44 and 46 to the housing and reduce the likelihood of delamination during the drilling process. The additional portions 54 can be formed by not masking the end of the first bond shelf 18 so that conductive material plates onto the shelf."

MARK UP VERSION OF AMENDED CLAIMS TO SHOW CHANGES THERETO

1 15. (Amended Once) The method as recited in claim 13,
2 wherein
3 the portion of the conductive strip [material] is
4 removed by
5 drilling a portion of the bond shelf.

1 16. (Amended Once) The [package] method as recited in
2 claim 13, further comprising: [the steps of]
3 mounting an integrated circuit to the housing and
4 connecting the integrated circuit to the bond pad.

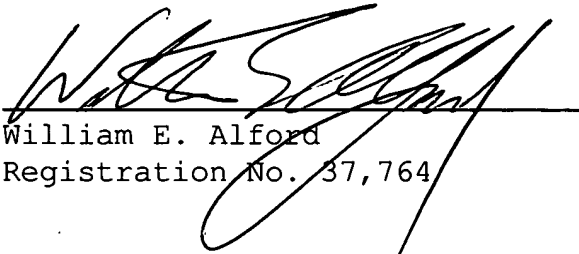
CONCLUSION

A first examination as to the merits of claims 13-34 is respectfully requested. Allowance of the claims at an early date is solicited.

The examiner is invited to contact Applicant's undersigned counsel by telephone at (714) 557-3800 to expedite the prosecution of this case should there be any unresolved matters remaining. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such deposit account.

Respectfully submitted
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Dated: October 29, 2001


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